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IN THE CLAIMS:

Please amend claims 1, 9, and 17, and add new claims 21-40 as follows:

1. (Currently Amended) A method for discovering resources in a network of user nodes, said method comprising the steps of:

receiving a resource request to be published at a first user node of the network;

determining whether or not to send the resource request to a publish-subscribe server node;

forwarding the resource request to a second user node of the network ~~through a direct connection~~, when it is determined not to send the resource request to the publish-subscribe server node; and

sending the resource request to the publish-subscribe server node for publication to a plurality of the user nodes of the network, when it is determined to send the resource request to the publish-subscribe server node.

2. (Currently Amended) The method as defined in claim 1, wherein in the determining step, the determination of whether or not to send the resource request to the publish-subscribe server node is a random decision made by the first user node.

3. (Currently Amended) The method as defined in claim 2, wherein in the determining step, the random decision is made based on a weighting factor corresponding to the probability that the first user node will decide to send the resource request to the publish-subscribe server node.

4. (Original) The method as defined in claim 1, wherein the forwarding step includes the sub-steps of:

randomly selecting one of the user nodes to which the first user node is connected to be the second user node; and

forwarding the resource request from the first user node to the second user node through a direct connection.

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5.   (Currently Amended) The method as defined in claim 1, further comprising the step of publishing sending, via publication from the publish-subscribe server node, the resource request to at least some of the user nodes of the network via the server node.

6.   (Currently Amended) The method as defined in claim 5, wherein in the publishing step of sending via publication from the publish-subscribe server node, the publish-subscribe server node publishes sends the resource request to all of the user nodes of the network that are subscribed to one or more selected resource request channels.

7.   (Currently Amended) The method as defined in claim 1, further comprising the step of repeating the steps of determining and forwarding until in the determining step a user node that received the resource request decides to send the resource request to the publish-subscribe server node.

8.   (Original) The method as defined in claim 1, further comprising the steps of:
        sending the resource request to be published from a requesting user node, which desires the request resource, to the first user node; and
        sending an identical resource request from the requesting user node to all of the user nodes to which the requesting user node is connected through direct connections.

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9.   (Currently Amended) A machine-readable medium encoded with a program for discovering resources in a network of user nodes, said program containing instructions for performing the steps of:

receiving a resource request to be published at a first user node of the network;

determining whether or not to send the resource request to a <u>publish-subscribe</u> server node;

forwarding the resource request to a second user node of the network ~~through a direct connection~~, when it is determined not to send the resource request to the <u>publish-subscribe</u> server node; and

sending the resource request to the <u>publish-subscribe</u> server node for publication <u>to a plurality of the user nodes of the network</u>, when it is determined to send the resource request to the <u>publish-subscribe</u> server node.

10.   (Currently Amended) The machine-readable medium as defined in claim 9, wherein in the determining step, the determination of whether or not to send the resource request to the <u>publish-subscribe</u> server node is a random decision made by the first user node.

11.   (Currently Amended) The machine-readable medium as defined in claim 10, wherein in the determining step, the random decision is made based on a weighting factor corresponding to the probability that the first user node will decide to send the resource request to the <u>publish-subscribe</u> server node.

12.   (Original) The machine-readable medium as defined in claim 9, wherein the forwarding step includes the sub-steps of:

randomly selecting one of the user nodes to which the first user node is connected to be the second user node; and

forwarding the resource request from the first user node to the second user node through a direct connection.

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13.   (Currently Amended) The machine-readable medium as defined in claim 9, wherein said program further contains instructions for performing the step of ~~publishing~~ sending, via publication from the publish-subscribe server node, the resource request to at least some of the user nodes of the network ~~via the server node~~.

14.   (Currently Amended) The machine-readable medium as defined in claim 13, wherein in the ~~publishing~~ step of sending via publication from the publish-subscribe server node, the publish-subscribe server node ~~publishes~~ sends the resource request to all of the user nodes of the network that are subscribed to one or more selected resource request channels.

15.   (Currently Amended) The machine-readable medium as defined in claim 9, wherein said program further contains instructions for performing the step of repeating the steps of determining and forwarding until in the determining step a user node that received the resource request decides to send the resource request to the publish-subscribe server node.

16.   (Original) The machine-readable medium as defined in claim 9, wherein said program further contains instructions for performing the steps of:

        sending the resource request to be published from a requesting user node, which desires the request resource, to the first user node; and

        sending an identical resource request from the requesting user node to all of the user nodes to which the requesting user node is connected through direct connections.

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17.   (Currently Amended) A user node for use in a computer network of the type that includes a plurality of user nodes and at least one publish-subscribe server node, with each of the user nodes being connected to at least one other user node through a direct connection, said user node comprising:

a receiving interface for receiving a resource request to be published;

control means for deciding whether or not to send the resource request to the publish-subscribe server node; and

at least one transmitting interface for selectively forwarding the resource request to a second user node of the network through a direct connection or sending the resource request to the publish-subscribe server node for publication,

wherein the transmitting interface forwards the resource request to the second user node when the control means decides not to send the resource request to the publish-subscribe server node, and sends the resource request to the publish-subscribe server node for publication to a plurality of the user nodes of the network when the control means decides to send the resource request to the publish-subscribe server node.

18.   (Currently Amended) The user node as defined in claim 17, wherein the control means randomly decides whether or not to send the resource request to the publish-subscribe server node.

19.   (Original) The user node as defined in claim 18, wherein the control means randomly decides based on a weighting factor.

20.   (Original) The user node as defined in claim 17, wherein the control means randomly selects one of the other user nodes of the network to be the second user node to which the resource request is forwarded.

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21.   (New) A method for broadcasting information in a network of user nodes, said method comprising the steps of:

        receiving, at a publish-subscribe server node, a join announcement from a new user node; and

        sending, via publication from the publish-subscribe server node, the join announcement to a first plurality of the user nodes of the network to solicit connections from those user nodes,

        wherein a second plurality of the user nodes are each connected to one or more other of the user nodes through direct peer-to-peer connections so as to form a viral-type network.

22.   (New) The method as defined in claim 21, wherein the first plurality of the user nodes includes all of the user nodes of the network.

23.   (New) The method as defined in claim 21, wherein the first plurality of the user nodes consists of all of the user nodes that are subscribed to one or more node discovery channels.

24.   (New) The method as defined in claim 23, further comprising the step of receiving, at the publish-subscribe server node, a request to subscribe the new user node to at least one resource request channel.

25.   (New) The method as defined in claim 21, further comprising the step of receiving, at the publish-subscribe server node, a resource request from the new user node.

26.   (New) The method as defined in claim 25, further comprising the step of sending, via publication from the publish-subscribe server node, the resource request to all of the user nodes of the network that are subscribed to one or more resource request channels.

27.   (New) The method as defined in claim 25, further comprising the step of sending an identical resource request from the new user node to all of the user nodes to which the new user node is connected through direct peer-to-peer connections.

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28.   (New) The method as defined in claim 21, further comprising the step of initiating a direct peer-to-peer connection between the new user node and at least one of the user nodes of the network.

29.   (New) A machine-readable medium encoded with a program for broadcasting information in a network of user nodes, said method comprising the steps of:

     receiving, at a publish-subscribe server node, a join announcement from a new user node; and

     sending, via publication from the publish-subscribe server node, the join announcement to a first plurality of the user nodes of the network to solicit connections from those user nodes,

     wherein a second plurality of the user nodes are each connected to one or more other of the user nodes through direct peer-to-peer connections so as to form a viral-type network.

30.   (New) The machine-readable medium as defined in claim 29, wherein the first plurality of the user nodes includes all of the user nodes of the network.

31.   (New) The machine-readable medium as defined in claim 29, wherein the first plurality of the user nodes consists of all of the user nodes that are subscribed to one or more node discovery channels.

32.   (New) The machine-readable medium as defined in claim 31, wherein said program further contains instructions for performing the step of receiving, at the publish-subscribe server node, a request to subscribe the new user node to at least one resource request channel.

33.   (New) The machine-readable medium as defined in claim 29, wherein said program further contains instructions for performing the step of receiving, at the publish-subscribe server node, a resource request from the new user node.

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34.   (New) The machine-readable medium as defined in claim 33, wherein said program further contains instructions for performing the step of sending, via publication from the publish-subscribe server node, the resource request to all of the user nodes of the network that are subscribed to one or more resource request channels.

35.   (New) A publish-subscribe server node for use in a computer network of the type that includes user nodes, said publish-subscribe server node comprising:

a receiving interface for receiving a join announcement from a new user node; and

a transmitting interface for sending the join announcement to a first plurality of the user nodes of the network to solicit connections from those user nodes,

wherein a second plurality of the user nodes are each connected to one or more other of the user nodes through direct peer-to-peer connections so as to form a viral-type network.

36.   (New) The publish-subscribe server node as defined in claim 35, wherein the first plurality of the user nodes includes all of the user nodes of the network.

37.   (New) The publish-subscribe server node as defined in claim 35, wherein the first plurality of the user nodes consists of all of the user nodes that are subscribed to one or more node discovery channels.

38.   (New) The publish-subscribe server node as defined in claim 37, wherein the receiving interface also receives a request to subscribe the new user node to at least one resource request channel.

39.   (New) The publish-subscribe server node as defined in claim 35, wherein the receiving interface also receives a resource request from the new user node.

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40. (New) The publish-subscribe server node as defined in claim 39, wherein the transmitting interface sends the resource request to all of the user nodes of the network that are subscribed to one or more resource request channels.